

REMARKS

Claims 1, 2, 4-12, 14-21, 23-29 and 31-36 are pending.

Applicants acknowledge the Examiner's maintained rejection of claims 1, 2, 4-12, 14-21, 23-29 and 31-36 as being unpatentable because of alleged obviousness-type double patenting in view of co-owned U.S. Patent No. 6,239,298. Applicants respectfully traverse this rejection, based on the differences in structure and surprising oxidative stability of the products formed from the respective 'first moiety' with the second and third moieties, which result in differences in utility of the products as discussed in detail herein.

Applicants acknowledge the Examiner's objection to claim 1 in view of recitation of "compound." Applicants traverse this objection, because it is claims 20-35 that correspond to compositions that comprise the compounds of claim 1.

Applicants acknowledge the Examiner's rejection of composition claim 23, under 35 U.S.C. 112 second paragraph as being indefinite in the recitation of "compound." Applicants have amended claim 23 to obviate this rejection.

Applicants acknowledge the Examiner's objection to claims 10 and 36 as being dependent upon a rejected base claim. Applicant's arguments with respect to the Examiner's rejection of claim 1 obviate this rejection.

Applicants acknowledge the Examiner's objection to claims 10 and 36 "because the first moiety of the patent is a trimethylol propane trioleate-sorbic acid polyol compound." Applicants have amended the claims to obviate this objection.

No new matter has been added.

Nonstatutory Double Patenting Rejection

The Examiner has maintained the rejection of claims 1, 2, 4-12, 14-21, 23-29 and 31-36 as being unpatentable because of alleged obviousness-type double patenting in view of co-owned U.S. Patent No. 6,239,298 (Office Action of 03 May 2006, at page 2). The Examiner urges that while the

claims are not identical, they are not patentably distinct. That is the Examiner is suggesting that the differences between particular present claims and particular claims of the patent are obvious in view of the patent claims.

Specifically, the Examiner asserts that “the claims are not patentably distinct because the first moiety of the present invention encompasses the first moiety of the patent” such that “the unsaturated synthetic base oil of the present invention encompasses the limitation of an unsaturated triglyceride plant oil *thermal* polymer as set forth in the patent” (see Office Action of 03 May 2006 at top of page 3).

Applicants respectfully traverse this rejection, because the the instant claims are not obvious in view of those of the patent, based on the arguments already of record and the fact that the *first* moieties are distinguishable, as are the reaction products thereof with the second and third moieties, and this is particularly true in the case of thermal polymers cited by the Examiner. Moreover, these differences result in fundamental, non-obvious differences in product utility because of differences in, for example, oxidative stability.

As previously discussed, the '298 patent relates to fuel lubricity additives, and recites and claims the use of an “unsaturated triglyceride plant oil or a thermal polymer thereof” as a *first* moiety, whereas the claims of the instant application recite use of “unsaturated synthetic base oil” first moiety.

Significantly, because they are naturally occurring plant oils that are heterogenous with respect to carbon chain length and degree of unsaturation, the *first* moiety unsaturated triglyceride plant oils of the '298 patent (*e.g.*, tung oil, rapeseed oil, soybean oil, etc.) are heterogenous and comprise, to various extents, significantly polyunsaturated (*e.g.*, including polyene) fatty acids chains such that the resulting *first* moiety-*second* moiety products, and the subsequent products with *third* moieties are correspondingly heterogenous and polyunsaturated compared to the instant products. For example, Figure 1 of the '298 patent (Attached hereto as APPENDIX A) shows a product of rapeseed oil, maleic anhydride and trimethylolpropane that has polyunsaturated carbon chains, and five (5) double bonds. Furthermore, because of the heterogeneity of polyunsaturation

of such natural oils, other significant products from rapeseed oil reaction (present only with the rapeseed product shown in Figure 1) would have even a higher number of double bonds. By contrast, TMOSS, made from an unsaturated synthetic base oil trimethylol propane trioleate)) is relatively unsaturated; APPENDIX B, attached hereto, shows the Trimethylol Propane Trioleate cycloaddition product with sorbic acid, to produce a product that has only two (2) double bonds.

Significantly, and fundamentally, according to aspects of the present invention, the higher degree of unsaturation in the products derivable from the heterogeneous naturally occurring plant oils, results in substantially lower oxidative stability (as can be measured by Iodine No. or oxidation studies). Indeed, as taught and confirmed in Examples 2 and 3 of the instant application, TMOSS (made from an unsaturated synthetic base oil) is as effective at preventing wear as the additive made by the same process from soybean oil, but is much more stable in high temperature, oxidizing conditions, as would be found in an engine crankcase. **“The high stability is shown by the virtual elimination of the sludge that precipitated from the soybean oil-based sample”; “99.8% less sludge with TMOSS.”** (see Specification at page 13, lines 31-36). Applicants contend that such surprisingly enhanced stability, confirms that the present claims are not, and can not possibly be *obvious* in view of those of the patent.

Furthermore, and contrary to the Examiner’s assertion, the case with respect to thermal co-polymerization, as well recognized in the art, is even more distinctive, because thermal co-polymerization of vegetable oils is accompanied by significant cross-linking of the unsaturated sites of the carbon chains and would produce vastly different products with distinctive molecular weight, viscosity, and properties, relative to the instant products.

Therefore, applicants respectfully disagree with the Examiner’s assertion that “the unsaturated synthetic base oil of the present invention satisfies the unsaturated triglyceride plant oil and thermal polymers thereof of the ’298 patent.” This is simply NOT true, and Applicant’s data in the specification proves it.

Applicants, therefore, respectfully request withdrawal of the Examiner’s rejection based on obviousness-type double patenting.

Claim Objection

The Examiner has objected to claim 1 in view of recitation of “compound.”

Applicants traverse this objection, because it is claims 20-35 that correspond to compositions that comprise the compounds of claim 1, and applicants, therefore, respectfully request withdrawal of this objection.

35 U.S.C. 112 second paragraph

Claim 23:

The Examiner has objected to claim 23, under 35 U.S.C. 112 second paragraph, as being indefinite in the recitation of “compound.” Applicants have amended claim 23 to recite “supplement composition” to obviate this rejection.

Claims 10 and 36:

Applicants acknowledge the Examiner’s objection to claims 10 and 36 as being dependent upon a rejected base claim. . Applicant’s arguments with respect to the Examiner’s non-statutory double patenting rejection of claim 1 obviates this rejection.

Applicants acknowledge the Examiner’s objection to claims 10 and 36 “because the first moiety of the patent is a trimethylol propane trioleate-sorbic acid polyol compound.” Applicants respectfully traverse this objection and point out the Examiner has inadvertently misconstrued this claim. Applicants have nonetheless amended claim 10 to recite “combinations” in place of “compounds” to clarify that the claim recites three particular combinations of first moiety-second moiety-third moiety. Conforming amendments have been made to claim 36.

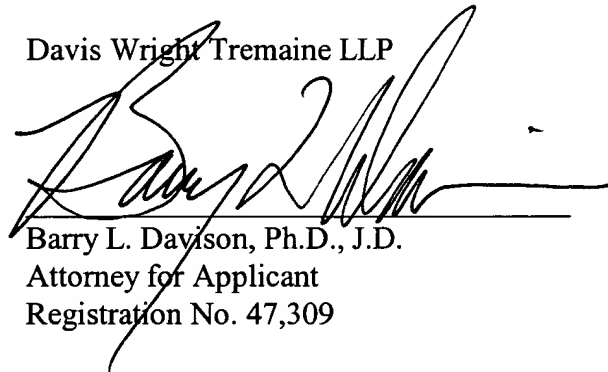
Applicants, therefore, respectfully request withdrawal of this rejection.

CONCLUSION

In view of the foregoing amendments and remarks, applicants respectfully request entry of the present Response and Amendment, and allowance of all claims 1, 2, 4-12, 14-21, 23-29 and 31-36. The Examiner is encouraged to phone applicants' attorney, Barry L. Davison, to resolve any outstanding issues and expedite allowance of this application.

Respectfully submitted,

Davis Wright Tremaine LLP

A handwritten signature in black ink, appearing to read 'Barry L. Davison', is written over a horizontal line.

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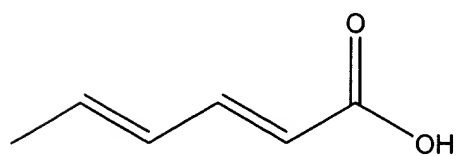
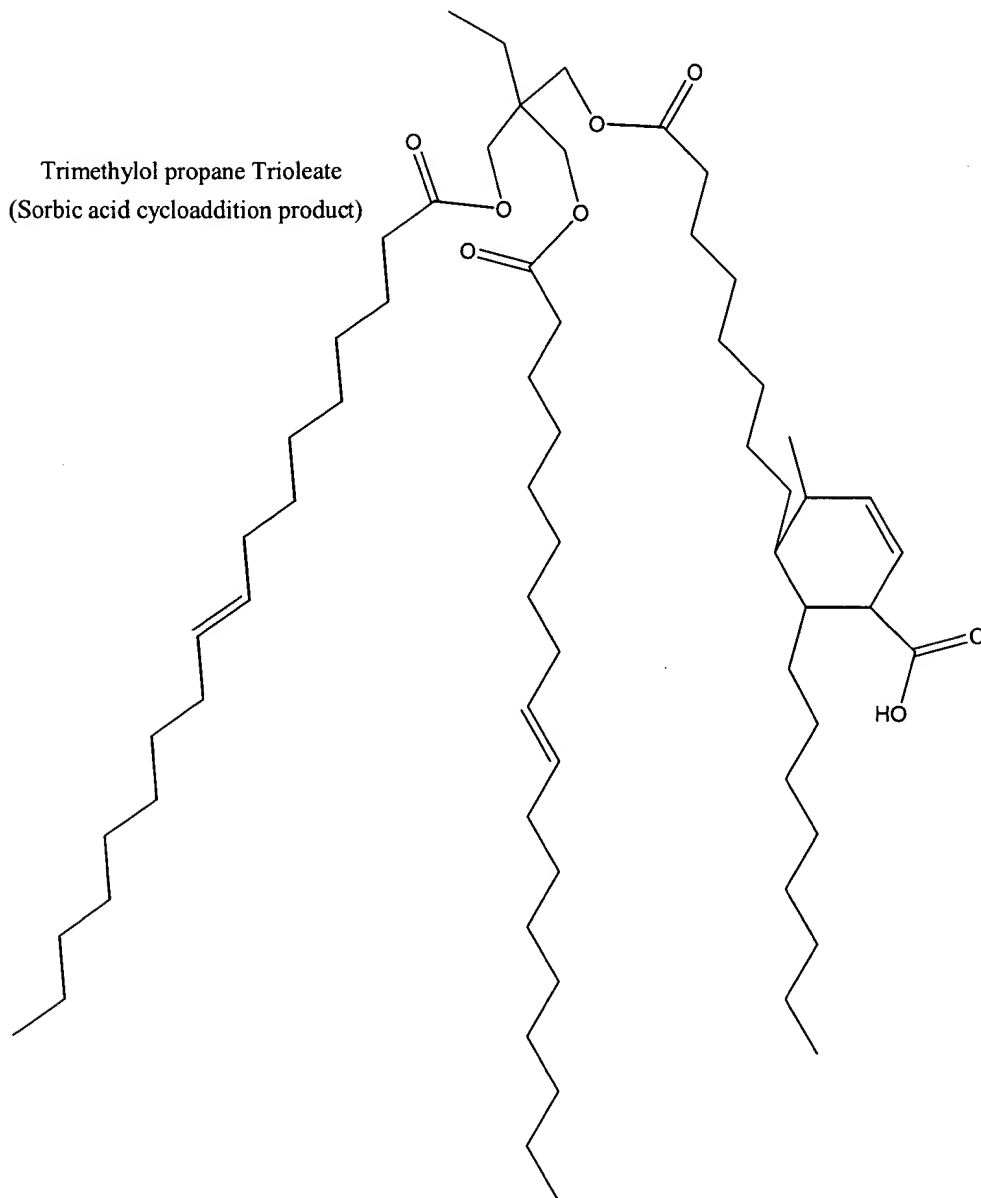
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APPENDIX B

Trimethylol propane Trioleate
(Sorbic acid cycloaddition product)



Sorbic acid